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ABSTRACT

The purpose of this study was to provide test-retest reliability data for Holland's Self Directed Search for Educational and Vocational Planning (SDS). Sixty-five subjects were administered the SDS 7-10 months after they completed it during freshman orientation. Results indicated little change in summary codes obtained by subjects. Median reliability coefficients were .75 (Pearson Product Moment), 87 (Average Common Elements), and .92 (Spearman Rho). These coefficients are generally higher than the homogeneity of content coefficients (KR20) for subscales reported by Holland (1971) and the test retest coefficients reported by Baldwin (1971). Results were discussed and it was concluded that the SDS shows an acceptable amount of reliability, although subjects incorrectly scoring their own booklets is a source of unreliability. (Author)

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THE RELIABILITY OF HOLLAND'S SELF DIRECTED SEARCH FOR EDUCATIONAL AND VOCATIONAL PLANNING

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Research Report # 6-71

Summary

The purpose of the study was to provide test-retest reliability data for Holland's Self Directed Search for Educational and Vocational Planning (SDS). Sixty-five subjects were administered the SDS 7-10 months after they completed it during freshman orientation. Results indicated relatively little change in summary codes obtained by subjects. Median reliability coefficients were .75 (Pearson Product Moment), .87 (Average Common Elements), and .92 (Spearman Rho). These coefficients are generally higher than the homogeneity of content coefficients (KR20) for subscales reported by Holland (1971) and the test-retest coefficients reported by Baldwin (1971). Results were discussed and it was concluded that the SDS shows an acceptable amount of reliability, although subjects incorrectly scoring their own booklets is a source of unreliability.

The Self-Directed Search for Educational and Vocational Planning (SDS) is a self-scoring, self-administering, instrument designed by John L. Holland, author of the Vocational Preference Inventory. The SDS has two main purposes: "To provide a vocational counseling experience for people who do not have access to counselors or who cannot afford their services, and to multiply the number of people a counselor can serve," (Holland, 1971, p. 3).

The SDS is composed of two booklets, one for self assessment and one which lists occupations. A person fills out the Assessment booklet and obtains a three letter summary code. He then uses the Occupational Classification booklet to find the occupations which correspond to his "summary code."

The validity of the SDS is based on Holland's theory of personality types and on his assertion that the best way to ascertain what occupational choice a person will make is to ask him directly. He incorporates this belief in the SDS by asking subjects to list "occupational daydreams" at the beginning of the assessment booklet and to find the 3 letter codes which correspond to the daydream occupations. The 3 letter codes represent combinations of Holland's six personality types: Realistic, Investigative (formerly Intellectual), Artistic, Social, Enterprising and Conventional. This 3 letter summary code is based on scores from five sections of the Assessment booklet (Activities, Competencies, Occupations and two Self-Estimates). A complete explanation of the theory can be found in Holland (1959, 1966).

Holland (1971) provides internal consistency reliability coefficients (KR 20) ranging from .53 to .87 for 358 men and 366 women on the Assessment booklet's five sections (see Table 1).

The purpose of the present study was to provide test-retest reliability information on the SDS for entering college freshmen.

Method

Students enrolled in introductory psychology in the Spring semester 1971 at the University of Maryland, College Park who had taken the SDS during the summer of 1970 (June 25 to August 7) as part of freshman orientation were identified. Of the 144 students in this group, the first 65 (who were randomly selected) willing to retake the SDS were chosen as subjects for the study. Only two students contacted did not wish to participate. Subjects were contacted by telephone and given course credit for participating. All subjects were retested between March 15 and April 2, 1971 in the Counseling Center. The sample consisted of 45 females and 20 males.

Several methods were used for arriving at the test-retest reliability of the summary codes obtained on the first and second administrations of the SDS. The first method (percent change) is a simple description of the changes which occurred in the 3 letter summary code from the first to the second administration. The types of changes were arranged in the order of seriousness from (1) change of letter(s), to (2) addition or subtraction of number of letters (ties), to (3) same letters. Each test-retest observation was placed only in the category of the most serious change which a code displayed. Changes in letters were noted for only the most important position. For example, if a code changed from SEA to IES, it was counted as a letter change in the first position, not as a change affecting any other position or in the order of the letters.

A second method used to estimate reliability was calculating Pearson Product Moment correlations from scores on each of the six personality scales on the SDS. In addition, the rank order of the six personality scales was determined for each subject for each testing. A rank order correlation (Spearman Rho) was

then calculated for each subject and the median of these 65 correlations was taken to be the overall reliability of the SDS.

Test-retest reliability was also estimated using McNemar's (1949) Average Common Elements method. This coefficient represents the degree of association between two variables as a function of the number of elements common to the two variables. A coefficient was calculated for each of the 65 test-retest observation pairs, using summary code letters as elements. A median coefficient was taken to reflect overall SDS reliability.

Results and Discussion

The results of the study (see Tables) generally indicate that the SDS has at least acceptable, if not high, reliability. Consistently higher reliabilities were found than those reported by Baldwin (1971). One exception was the relatively low Pearson correlation (Table 3) on Realistic in the present study compared to Baldwin's data (.60 vs. .78). The best explanation is likely the differences in the samples. While Baldwin does not report the frequency with which Realistic codes appear in her sample, the current study as well as others done on similar samples at Maryland (Collins and Sedlacek, 1971; Kimball and Sedlacek, 1971) indicate that Realistic is not a common code for entering university students. Since it does not occur frequently, there is less opportunity for a full range of Realistic scores or codes to appear and this should cause relatively low reliability coefficients or percentage statements. The heterogeneity of the current sample (on sex, geographical area, religion, etc.) compared to Baldwin's may also help explain the generally greater reliability found in the current study.

The largest source of unreliability in the SDS is error due to self scoring. Baldwin (1971) reported reliabilities based on uncorrected summary codes which

were lower than those on corrected codes. In the present study data are reported for corrected codes only, but 71% of the subjects made some kind of error in scoring. Perhaps it is inherent with any self-scoring instrument that such problems arise, but the potential for such errors must be considered and dealt with. For instance, it may be appropriate for the SDS instructions to suggest that a friend or acquaintance routinely check the subject's calculations. It is also likely that in mass administrations of the instrument, as with the current study, motivation and interest in the task will vary and hence contribute to scoring errors. It may be that fewer errors would result from individual use by motivated persons.

The reader is reminded that in practice the SDS yields summary code letters and hence relative ranking, rather than scale scores, is of primary importance. Hence the data in Table 3 on the Spearman Rho coefficients may be most meaningful. The Pearson coefficients consider only the scale values, and the Average Common Elements method does not consider the order within the three summary code letters. Both the Spearman and the Average Common Elements median coefficients are based on coefficients for individual subjects. Such a procedure may not be meaningful. However, the purpose of this study was to provide estimates of reliability, using a number of methods and assumptions, and the overall conclusion is that the SDS does show a reasonable amount of reliability.

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Table 1.

Internal Consistency Coefficients for
Activities, Competencies, and Occupations Scales*

	Men (N=358)			Women (N=366)		
	MEAN	SD	KR20	MEAN	SD	KR20
Activities						
Realistic	4.46	3.28	.84	1.32	1.94	.77
Investigative	5.60	2.96	.77	4.27	2.65	.75
Artistic	4.61	2.76	.73	6.94	2.39	.70
Social	6.56	2.25	.63	8.50	1.81	.53
Enterprising	6.23	2.90	.78	6.20	2.74	.75
Conventional	3.60	2.78	.79	3.73	2.73	.79
Competencies						
Realistic	5.30	3.30	.83	1.14	1.72	.75
Investigative	7.77	2.43	.72	6.20	2.50	.68
Artistic	2.67	2.27	.71	4.60	2.59	.69
Social	6.43	2.48	.71	8.09	2.17	.65
Enterprising	4.59	2.77	.75	4.72	2.75	.75
Conventional	2.77	2.17	.69	3.15	2.34	.72
Occupations						
Realistic	3.12	2.77	.77	1.19	1.77	.75
Investigative	5.07	3.90	.86	3.77	3.38	.84
Artistic	3.48	3.62	.87	5.77	3.93	.85
Social	3.61	3.43	.84	6.36	3.67	.82
Enterprising	4.01	3.42	.83	2.43	2.63	.78
Conventional	2.43	3.25	.88	1.48	2.32	.82

* From Holland (1971)

Table 2.

Changes in Summary Codes on
Retest Administration of the SDS

Type of change in summary code	Present Study N	Present Study %	Baldwin(1971)* N	Baldwin(1971)* %
Change of letter(s)				
in 1st position	12	19	1	2
in 2nd position	9	14	8	18
in 3rd position	14	22	10	22
Addition or subtraction of # of letters				
three letters	1	2	0	0
two letters	4	6	1	2
one letter	9	14	11	24
Same letters				
order changed	1	2	8	18
exactly same	15	23	6	13
Totals	65	102**	45	99**

* Data for 45 female Catholic high school sophomores over three week interval.
** Does not add to 100% due to rounding.

Table 3.

Test-Retest Reliability Coefficients for SDS
Summary Codes

Scale	Pearson Product Moment: Present Study	Pearson Product Moment: Baldwin(1971)*
Realistic	.60	.78
Investigative	.84	.64
Artistic	.83	.81
Social	.74	.52
Enterprising	.70	.50
Conventional	.76	.54
Median Correlation	.75	.59

Rank Order (Spearman Rho)

Median (present study) = .92

"Average" (Baldwin,1971)* = .83

Average Common Elements

Median (present study) = .87

"Average" (Baldwin, 1971)* = .81

* Data for 45 female Catholic high school sophomores over three week interval.